

App. Serial No. 10/530,449
Docket No.: NL020983US

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In the Claims:

This listing of claims replaces all prior versions.

1. *(Previously Presented)* An electric device with a body having:

a resistor comprising a phase change material which is able to be in a first phase and in a second phase, the resistor having a surface with a first contact area and a second contact area, the resistor having an electrical resistance between the first contact area and the second contact area, the electrical resistance having a first value when the phase change material is in the first phase and a second value when the phase change material is in the second phase,

a first conductor electrically connected to the first contact area,

a second conductor electrically connected to the second contact area,

the first conductor, the second conductor and the resistor being able to conduct a current for heating of the phase change material to enable a transition from the first phase to the second phase, and

a layer of a dielectric material for reducing a heat flow to parts of the body free of the resistor during the heating, the dielectric material comprising a porous material with pores having a size between 0.5 and 50 nm.

2. *(Previously Presented)* An electric device as claimed in claim 1, wherein the pores have a size between 1 and 10 nm.

3. *(Previously Presented)* An electric device as claimed in claim 1, wherein the pores are substantially free of water.

4. *(Previously Presented)* An electric device as claimed in claim 1, wherein the pores have hydrophobic surfaces.

5. *(Previously Presented)* An electric device as claimed in claim 4, wherein the porous material comprises an organosilicate and the hydrophobic surfaces have hydrocarbyl groups.

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6. (*Previously Presented*) An electric device as claimed in claim 5, wherein the porous material is obtainable by

applying a liquid layer of a composition comprising tetra-alkoxysilane, hydrocarbylalkoxysilane, a surfactant and a solvent onto a substrate, wherein the molar ratio between tetra-alkoxysilane and hydrocarbylalkoxysilane is 3:1 at the most, and

heating the liquid layer to remove the surfactant and the solvent and to form the hydrophobic porous layer.

7. (*Previously Presented*) An electric device as claimed in claim 6, characterized in that the surfactant is a cationic surfactant, and the surfactant and the totality of alkoxysilanes are present in a molar ratio greater than 0.1:1.

8. (*Previously Presented*) An electric device as claimed in claim 1, characterized in that the porous material has a porosity above 20 percent.

9. (*Previously Presented*) An electric device as claimed in claim 1, characterized in that the resistor is embedded in the body, the layer being in direct contact with the resistor.

10. (*Previously Presented*) An electric device as claimed in claim 9, characterized in that the first contact area is smaller than the second contact area, and the first conductor comprises a part in direct contact with the first contact area, the part being embedded in the layer.

11. (*Previously Presented*) An electric device as claimed in claim 1, characterized in that the first conductor, the second conductor, the resistor and the layer constitute a memory element, and the body comprises:

an array of memory cells, each memory cell comprising a respective memory element and a respective selection device, and

a grid of select lines, each memory cell being individually accessible via the respective select lines connected to the respective selection device.

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12. (*Previously Presented*) An electric device as claimed in claim 11, characterized in that:

the selection device comprises a metal oxide semiconductor field effect transistor having a source region, a drain region and a gate region, and

the grid of select lines comprises N first select lines,

M second select lines, N and M being integers, and

an output line, the first conductor of each memory element being electrically connected to a first region selected from the source region and the drain region of the corresponding metal oxide semiconductor field effect transistor, the second conductor of each memory element being electrically connected to the output line, a second region of the corresponding metal oxide semiconductor field effect transistor which is selected from the source region and the drain region and which is free from the first region, being electrically connected to one of the N first select lines, the gate region being electrically connected to one of the M second select lines.